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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/670,250	09/26/2000	Mitchell S. Cohen	YOR920000440US1 (590.024)	5891

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Ference & Associates  
129 Oakhurst Road  
Pittsburgh, PA 15215

EXAMINER

ROJAS, OMAR R

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 12/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/670,250

Applicant(s)

COHEN ET AL.

Examiner

Omar Rojas

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 September 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 and 10-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-16 and 20-30 is/are rejected.
- 7) ☒ Claim(s) 17-19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All   b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

1. The amendment filed on September 23, 2002 has been entered and the requested changes to the claims have been made.

### ***Response to Arguments***

2. Applicant's arguments with respect to claims 1-8, 10-15, and 20-30 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. **Claims 23-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

Claims 23-28 appear to be directed toward a method of forming an optical waveguide that is considered to be a type of thin dielectric film, and not an optical fiber.

Thus, including the limitation of a bending radius of less than about 2.5 mm as recited in independent claim 12 would not appear to make sense for claims 23-28 because the term "bending radius" as used in the prior art appears to be applicable only to optical fibers and not optical waveguides of the dielectric film type as recited by claims 23-28.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

**6. Claims 1-6, 8, 10, 12-15, 22, and 30 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,314,219 to Zhang et al. (hereinafter Zhang).**

Regarding claims 1-3, 5, 8, and 10, Zhang discloses an apparatus for guiding at least one optical light path (e.g., see Fig. 2), said apparatus comprising: an input (120a) and output interface (120b); and at least one bent optical fiber (106) being disposed between the input and output interfaces, said optical fiber adapted to avoid breakage (see col. 5, ll. 14-22); wherein the at least one bent optical fiber (106) has a bending diameter of 3 mm (see col. 5, ll. 8-10, i.e., a bending radius of less than 2.5 mm); wherein the optical fiber (106) may inherently conduct an optoelectronic transmission; wherein the optical fiber (106) is spliced to the interfaces; wherein it is inherent that the adhesive used to adhere the optical fibers may require some time of heat curing (i.e.

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“baking”); wherein two or more bent optical fibers (e.g., see Fig. 5) may be provided to be capable of providing optoelectronic transmission or reception; wherein it is inherent that the all the optical fibers, and thus their interfaces as well, shown by Zhang comprise silicon.

Regarding claims 4 and 6, applicant is claiming the product including the process of making the apparatus, and therefore are of “product-by-process” nature. The courts have been holding for quite some time that: the determination of the patentability of product-by-process claim is based on the product itself rather than on the process by which the product is made. *In re Thorpe*, 77 F. 2d 695, 227 USPQ 964 (Fed. Cir. 1985); and patentability of claim to a product does not rest merely on a difference in the method by which that product is made. Rather, it is the product itself which must be new and unobvious. Applicant has chosen to claim the invention in the product form. Thus a prior art product which possesses the claimed product characteristics can anticipate or render obvious the claim subject matter regardless of the manner in which it is fabricated. A rejection based on 35 U.S.C. section 102 or alternatively on 35 U.S.C. section 103 of the status is eminently appropriate and acceptable. *In re Brown and Saffer*, 173 USPTQ 685 and 688; *In re Pilkington*, 162 USPQ 147. As such no weight is given to the process steps recited in claims 4 and 6.

Regarding claims 12-14, 22, and 30, the disclosure of Zhang inherently comprises a method encompassing all the steps of claims 12-14, 22, and 30. See the previous remarks concerning claims 1-3, 5, 8, and 10.

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Regarding claim 15, the previous remarks concerning claims 12-14 are incorporated. Zhang further discloses a thermal annealing process for adapting said optical bent element (106) to avoid mechanical breakage. See col. 6, ll. 53-65.

***Claim Rejections - 35 USC § 103***

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

**8. Claims 7, 11, 20, 21, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang as applied to claims 1 and 12 above, and further in view of U.S. Patent No. 5,835,659 to Ota et al. (hereinafter Ota).**

Regarding claims 7 and 29, Zhang differs from the claimed invention in that Zhang does not disclose or suggest the use of V-shaped grooves to accept at least one end of the bent optical fiber (106).

Ota, on the other hand, does teach the use of placing optical fibers into V-shaped fixing grooves (e.g., see Fig. 6 of Ota).

The ordinary skilled artisan would have sought to fix the optical fibers (102 & 104) of Zhang (as well as the ends of bent fiber 106) in V-shaped grooves to provide support and/or to facilitate coupling with external light sources. Such uses for V-shaped grooves are well known in the art.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to modify Zhang in view of Ota to obtain the invention specified by claims 7 and 29.

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Regarding claims 11 and 20, the examiner incorporates herein the previous remarks concerning claims 7 and 29. Note that when Zhang is combined with Ota, a base element would also be provided, i.e., the substrate (2) disclosed by Ota to fix the optical fibers.

Thus, Zhang in view of Ota further differs from claims 11 and 20 in that neither references expressly teaches a "cover element" which combines with the base substrate.

However, it is well known in the art to provide covering means for optical fibers disposed in V-grooves.

The ordinary skilled artisan would have wanted to further modify Zhang in view of Ota to provide a cover in order to protect the fragile optical fibers from damage. Thus, no patentable weight is given to claims 11 and 20.

Regarding claim 21, as noted with respect to claim 20, providing a cover element to protect the optical fibers of Zhang in view of Ota would have been obvious to one of ordinary skill in the art at the time of the claimed invention.

Furthermore, it is the position of this examiner that fabricating both the cover and base elements from silicon would have been an obvious design choice since silicon is a well known material used in optical device manufacturing in general. It is also the position of this examiner that using SiO<sub>2</sub> sintering to attach the cover and base elements would have also been obvious to the ordinary skilled artisan since SiO<sub>2</sub> sintering is well known for attaching optical elements in general.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to modify Zhang in view of Ota to obtain the invention specified by claim 21.

**9. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang.**

Regarding claim 16, the previous remarks concerning claim 15 are incorporated herein. Zhang also describes using an annealing process under a temperature having a range, for example, of 1100-1400° Celsius.

Thus, it would appear the method step of claim 16 is substantially described or suggested by Zhang, except, perhaps, for using a baking oven.

However, it is well known that baking ovens provide heat which would be needed for any thermal annealing process.

Therefore, alternatively, the examiner takes the position that it would have been obvious to use a baking oven for the thermal annealing process described by Zhang, at the time of the claimed invention thereby meeting all the limitations recited by claim 16.

***Allowable Subject Matter***

10. Claims 17-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter: Regarding claims 17-19, the prior art does not disclose or suggest, alone or in combinations, the recited method steps of claim 15 and further including any of



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following limitations: baking for 15 minutes; burning the buffer layer off during said baking step; or a baking step comprising anchoring the optoelectronic fiber to at least one of the input or output interfaces via a SiO<sub>2</sub> sintering process.

***Conclusion***

12. Since the Ota reference was submitted by the applicant(s), no copy thereof is being provided with this Office action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Omar Rojas whose telephone number is (703) 305-8528 and whose e-mail address is *omar.rojas@uspto.gov*. The examiner can normally be reached on Monday-Friday (7:00AM-3:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hemang Sanghavi, can be reached on (703) 305-3484. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722 for regular communications. The examiner's personal work fax number is (703) 746-4751.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Omar Rojas  
Patent Examiner  
Art Unit 2874

or  
December 15, 2002

  
**HEMANG SANGHAVI**  
**PRIMARY EXAMINER**